

FLUSH LABORATORIES  
221 East Hartsdale Avenue  
Hartsdale, NY 10530  
914-472-0120, FAX 472-0589

#### PREAMBLE

Because there is a huge shortage of potable water,  
worldwide, and because of the expense to produce  
this clear and most important drinkable liquid, any  
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## **SPECIFICATIONS**

0001           Because there is a huge shortage of potable water worldwide and because of the expense incurred producing this clear and most important drinkable liquid any ideas or devices that will alleviate some of the neediness, anywhere, would certainly be appreciated.

0002           I have invented devices which will save approximately half the water used in the flushing of toilets where they are installed. The existing toilet handles will be replaced with a new Handle, as part of this invention. One that swings from a central setting, to the right or left positions. Further, when moved to the right position Apportioned water from the toilet tank will discharge liquid waste from the toilet bowl. When moved to left position both solid and liquid waste will be discharged, as is normal.

(The invention will be linked with the existing toilet tank mechanisms to complete this function. That mechanism will remain mostly in tact.)

0003           To understand why this invention is so important consider how many times each human eliminate liquid waste in any time period, (and the savings of water that will result). Compare that to the one or two removals of solid waste for the same period. Then consider all this for a population's necessities.

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### TITLE OF INVENTION

0004 Supplemental Toilet Flushing Systems with Resultant Savings of Water

### DESCRIPTION OF OPERATION

0005 Invention Mechanisms are as Shown on Drawing No.1

The drawing shows three (3) schematic mechanical sections:

The FIRST SECTION detail, the device mechanism 'at rest'. The toilet Handle in a central position, facing down, vertically. The water level is at maximum.

That will be as maintained by any existing flushing mechanisms.

(Note: If Flush Industries were to manufacture its own mechanism similar to existing systems then these newly patented inventions would be consolidated into that mechanism).

The Handle's shaft extends horizontally into toilet tank. On the shaft are two cantilever attachments mounted on either side of the shaft.. They will rise or fall, depending on the position of the Handle. (detailed as shown for Tier 1 and Tier 2 on the drawing).

0006 Mounted on the Cantilever Attachment for the Tier 1 position is a Spring. The bottom of the Spring is attached to the vertical Arm No 1. On the base of the water Discharge Valve. When Arm No 1 is in the raised position water will discharge into the toilet bowl to create the Tier 1 flush.

Also, linked and in parallel, with Arm No 1 is Arm No2. Arm No 2 enters a Cylinder with mechanisms that Apportion the flow rate for the flush, and to reposition and recycle the Discharge Valve (after the flush). Drawing shows a solution for the water valving system. An Apportioning system could also be shown to operate pneumatically to effectuate the same savings.

0007 SECOND SECTION: Tier 1 Operation, as shown on the drawing. The Handle is revolved to the right. The Shaft Cantilever attachment will rise. The Spring will be compressed and simultaneously Arms No1 and No2 will rise. The water in the valve cylinder will be ejected, to begin the refill cycle. The Discharge Valve at the bottom of Arm No1 will open. This allows water in the tank to be discharged into the toilet bowl for the flush. The Spring will apply pressure onto Arm No 1 and Arm No2 and an adjustable Weight protruding from bottom of the Cylinder on Arm No2, and the Spring, will also apply pressure on Arm No1 to close the Discharge Valve. On Arm No2, installed in the upper part of the Cylinder, is an Apportioning Valve-- which controls the flow of new water provided from the existing toilet mechanism, as the existing air floating ball rises.

0008 Below the Apportioning valve is a Cut-off Valve. When the weight of water in the Cylinder is sufficient the Cut-off Valve on Arm No2, will close. Concurrently the Spring will also apply pressure on Arms No1 and No2. And synchronously the linkage to the Discharge Valve on Arm No1 will close that valve, and the flush will be complete. The invention will leave the device ready for the next flushing occasion.

0009 THIRD SECTION details the Handle turned to the left. The Cantilever on the Handle will link to the existing in-place toilet mechanism and will cause a complete flush, This will remove solid wastes and liquid waste, as is normal. When it has completed its cycle the Handle will resume its vertical, at rest position, for whatever flush situation will occur at a later time.

0010 CROSS-REFERENCE TO RELATED APPLICATIONS

Not Applicable

0011 STATEMENT REGARDING FEDERALLY SPONSORED  
RESEARCH OR DEVELOPMENT

Not Applicable

0012 REFERENCE TO SEQUENCE LISTING, A TABLE OR A  
COMPUTER PROGRAM LISTING COMPACT DISC  
APPENDIX

Not Applicable

BACKGROUND OF THE INVENTION

0013 There are so many articles in the newspapers and magazines about shortages of water required for human consumption and the difficulties to resolve them in an age of population expansions and/or explosive growth. It occurred to me that a small step might be taken if mechanisms used today to remove human waste could be modified to save water.

BRIEF SUMMARY OF THE INVENTION

0014 The invention is an additional mechanism installed within a working toilet. It could be either hydraulic or pneumatic. It will save approximately half the amount of water required for the liquid part of the flush. The existing toilet tank mechanisms will provide the water for the solid and liquid flushing.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE INVENTION

0015 Section 1 At Rest Position  
Installation of new Auxiliary device, with the new special Handle. Handle shown in vertical (or at rest ) position.

Section 2: Tier 1 action

Device with Handle rotated to the right. Valving shows Discharge Valve open, both Cylinder valving open.

Section 3: Tier 2 action

Device with Handle rotated to left. Invention's valves are linked with existing toilet mechanism for the complete flush. Discharge Valve will close when the flush water for the solid and liquid waste is depleted, and water level in the toilet tank will rise again to refill tank to complete the cycle.

DETAIL DESCRIPTION OF THE INVENTION

0016 The inventions will be installed within toilet tanks. They will function independently of the existing toilet mechanism for the apportioned part of the flushing process, (Tier 1) and in coordination(linked) with toilet mechanism for the total flush (Tier 2). All this is linked together through the Handle mechanism. The Handle shall be chrome-like finish on the outside of the bowl and corrosion resistant material inside the tank. It will have ball bearing action with gearing:

There will be three limiting stops: (1)A neutral position. (2) rotation to the right for Tier 1 flush position . And (3) rotation to the left for the Tier 2 flush position.

0017 The Apportioning Valve installed within a cylinder will have variable openings to get maximum water savings from the Tier 1 flush segment. It will be made of some corrosion resistant materials. The same materials can be used for the Cut Off Valve in the cylinder below the Apportioning Valve on Arm No. 2. along with a counter weight The weight shall be segmented for the initial adjustments for closing the Discharge Valve. The Discharge Valve shall be similar to those existing in all toilets. It may be possible to use only one Discharge Valve with a linkage to the existing toilet mechanism.